

Inside key compartment door 24 is a stainless steel liner 188 with a lip portion 190 that reinforces the door and helps retain the contents near the door as the door is being closed. Cellular urethane gaskets 192 are positioned at the points where door 24 contacts the case so as to prevent rain and contaminants from entering the case. This cellular urethane material resists taking a set, thereby assuring a long life for the door seals. An injection molded plastic bumper (not shown) can be provided on the outside of the lockbox so as to protect the fixture to which the lockbox is mounted (i.e. a door) from abrasion.

In alternative forms of the invention, shackle 22 can comprise a vinyl clad steel cable terminated with appropriately machined ends, such as ends 142 on shackle 22, so as to permit connection of the lockbox to trees and the like. The cable can again be provided with drip caps to prevent rain from entering the lockbox.

Having illustrated and described the principles of our invention with reference to a preferred embodiment and several variations thereof, it should be apparent to those skilled in the art that the invention can be modified in arrangement and detail without departing from such principles. For example, although the system is described with reference to a lockbox system for containing dwelling keys, it is readily adaptable to other uses, such as in industrial security systems. Similarly, although the preferred embodiment has been described as including all the claimed features, other systems could readily be designed that include only some of these features and that include other features not here discussed. Accordingly, we claim as our invention all such modifications as may come within the spirit and scope of the following claims and equivalents thereof.

We claim:

1. An electronic lock system including a lock and an electronic key, the lock comprising:  
means for restricting access to a secure area associated therewith;  
communication means for relaying data between the lock and the electronic key;  
memory means for containing a lock access code; and  
control means for controlling operation of the lock;  
the electronic key comprising:  
memory means for containing a key access code and an expiration date code; and  
communication means for relaying data between the electronic key and the lock;  
the system further including:  
calendar means for providing calendar data indicative of the date;  
logic means for comparing the calendar data from the calendar means with the expiration date code from the electronic key memory means to determine whether the key is expired; and  
means for allowing access to the secure area associated with the lock upon correspondence between the key and lock access codes only if it is determined that the key is not expired.
2. An electronic lock system according to claim 1 in which the key memory contains a plurality of key access codes, each of said key access codes having a corresponding expiration date stored in the key memory means and in which the logic means compares the calendar data from the calendar means with the expiration date corresponding to the key access codes for determining whether any of the key access codes are to be used to authorize access to the secure area.

3. The electronic lock system of claim 1 in which the lock comprises a real estate lockbox having a secure area therein for containing a dwelling key.

4. A method of operating an electronic real estate lockbox system comprising the steps:

providing an electronic lockbox having a shackle for attachment to a fixed object and having a secure compartment therein for containing a dwelling key;

providing an electronic key having the capability to communicate with the electronic lockbox and, if properly authorized, to obtain access to the secure compartment thereof; and

storing data in the key causing the key to become ineffective in obtaining access to the secure compartment of the lockbox upon occurrence of a predetermined condition.

5. In an electronic lock system comprising an electronic lock and an electronic key, the lock having a secure area associated therewith that can be accessed upon receipt of a unlocking signal from the key, a method of minimizing risk to system security due to lost or stolen keys comprising the steps:

storing expiration data in the electronic key, said data establishing the useful life of the key;

producing calendar data in the electronic lock related to the current date;

comparing the expiration data with the calendar data to determine whether the key should be considered expired;

preventing access to the secure area if said comparison indicates that the key is expired; and

storing new expiration data in the key to extend the useful life thereof.

6. In an electronic lock system comprising an electronic lock and an electronic key, the lock having a secure area associated therewith that can be accessed upon receipt of a unlocking signal from the key, a method of minimizing risk to system security due to lost or stolen keys comprising the steps:

storing expiration data in the electronic key, said data establishing the useful life of the key;

producing calendar data in the electronic lock related to the current date;

comparing the expiration data with the calendar data to determine whether the key should be considered expired;

preventing access to the secure area if said comparison indicates that the key is expired;

compiling in the lock a log of lock activity; and  
storing in said log an entry indicating an attempted access by an expired key if said comparison step indicates the key is expired.

7. An electronic real estate lockbox system comprising a lockbox and a key, the key including:

communications means for relaying data between the key and the lockbox;

circuit means for controlling operation of the key;  
battery means for supplying power to the circuit means; and

memory means for storing a key expiration date code;  
the lockbox including:

communications means for relaying data between the lockbox and the key;

compartment means for releasably containing an article;

compartment lock means for controllably securing the compartment means in a locked state;